

REMARKS/ARGUMENTS

Reconsideration of the application as amended is respectfully requested.

Status of the Claims

Claims 1-10, 12 and 15-24 are pending in the application, with claim 1 being the only independent claim. Claims 1-3, 5-10, 12, 15-22 and 24 have been amended. Claims 11, 13, 14 and 25 have been canceled, without prejudice or disclaimer.

Overview of the Office Action

The drawings stand objected to because they show reference numeral 5 which is not mentioned in the description.

Claims 1-7, 9, 10, 16, 22 and 25 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,498,355 (*Harrah*).

Claim 8 stands rejected under 35 U.S.C. 103(a) as being unpatentable over *Harrah* in view of U.S. Patent No. 6,800,930 (*Jackson*).

Claims 12, 15 and 17-21 and canceled claims 11 and 13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Harrah* in view of U.S. Patent No. 6,340,824 (*Komoto*).

Claim 14 (now canceled) stands rejected under 35 U.S.C. 103(a) as being unpatentable over *Harrah* in view of *Komoto*, and further in view of U.S. Patent No. 6,095,666 (*Salam*).

Claims 23 and 24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Harrah* in view of U.S. Patent No. 6,318,886 (*Stopa*).

Amendment Addressing Informality

As recited above, the specification has been amended to mention the cap designated by reference numeral 5. No new matter has been added because a person with ordinary skill in the art would recognize that the component designated by reference numeral 5 is a cap. In view of this amendment, withdrawal of the objection to the drawings is respectfully requested.

Information Disclosure Statement

Applicants filed two Information Disclosure Statements when entering the national phase in the U.S. The first Information Disclosure Statement (First IDS) lists references that were cited in the International Search Report for the underlying International Application No. PCT/DE03/03240. The Examiner did not consider the foreign references listed in the First IDS on the ground that applicants did not submit copies of the listed foreign references.

It is respectfully submitted that copies of the references cited in the International Search Report should have been supplied by WIPO to the USPTO (see Article 2 of the Patent Cooperation Treaty). Therefore, copies of the listed foreign references should have been supplied by the WIPO to the USPTO.

The Examiner is therefore respectfully requested to consider the listed foreign references. A revised First IDS and copies of the listed foreign references are enclosed for that purpose.

Summary of Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

The present specification discloses an optoelectronic component 1 includes a heat sink 12; a carrier 22 thermally conductively connected to the heat sink 12; a semiconductor arrangement 4 which emits and/or receives electromagnetic radiation and which is arranged on the carrier 22; and external electrical connections 9 which are connected to the semiconductor arrangement 4. The external electrical connections 9 are arranged in electrically insulated fashion on the heat sink 12 at a distance from the carrier 22. The semiconductor arrangement 4 and the carrier 22 are arranged in a cavity of a basic housing 20 which has an inner side 17 which obliquely faces the semiconductor arrangement 4 and forms a first reflective area for a portion of the electromagnetic radiation. Between the semiconductor arrangement 4 and the inner side 17 of the basic housing 20 there is a reflective filling compound 6 which, as seen from the semiconductor arrangement 4 toward the front 21 of the basic housing 20, has a curved surface which forms a second reflective area for a portion of the electromagnetic radiation. *See* Figure and paragraphs [0009] and [0040] to [0047] of the published specification.

Allowability of the Claims

Independent Claim 1

Independent claim 1 has been amended to include the subject matter of canceled claims 11, 13 and 14. Since claims 11 and 13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over *Harrah* in view of *Komoto*, and since claim 14 has been rejected under 35

U.S.C. 103(a) as being unpatentable over *Harrah* in view of *Komoto* and *Salam*, it is believed that the 35 U.S.C. 103(a) rejection would be applicable to amended claim 1.

Amend claim 1 recites the following:

“wherein the cavity in the basic housing comprises an inner side which obliquely faces the semiconductor arrangement and forms a first reflective area for a portion of the electromagnetic radiation, and

a reflective filling compound provided between the semiconductor arrangement and the inner side of the basic housing, the reflective filling material comprising a curved surface forming a second reflective area for another portion of the electromagnetic radiation” (emphasis added).

Applicants respectfully submit that amended claim 1 is patentable over *Harrah* in view of *Komoto* and *Salam* because the combination of *Harrah*, *Komoto* and *Salam* fails to teach or suggest all of the limitations of amended claim 1. In particular, the combination of *Harrah*, *Komoto* and *Salam* fails to teach or suggest the above-highlighted limitations of amended claim 1.

On page 9 of the Office Action, the Examiner states:

“Regarding claim 14, *Harrah* teaches substantially the claimed structure but does not teach that ‘the cavity between the semiconductor arrangement and lateral walls of the cavity contains a reflective filling compound which, as seen from the semiconductor arrangement toward the front of the basic housing, has a curved surface which forms a reflective area for a portion of the radiation.’ *Salam* (refer to Figure 10) teaches LED package, which has a curved surface (58) which forms a reflective area for a portion of the radiation. *Komoto* (refer to Figure 46) teaches forming curved surfaces (surface of 542E) filling compounds. It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the invention of *Harrah* so that the cavity between the semiconductor arrangement and lateral walls of the cavity contains a reflective filling compound which, as seen from the semiconductor arrangement toward the front of the basic housing, has a curved surface which forms a reflective area for a portion of the radiation. The ordinary artisan would have been motivated to modify *Harrah* for at least the purpose of providing control of light intensity in a specific direction (depending on the curvature of the reflective area) using a filling compound that can easily be shaped to various curvatures.”

Applicants respectfully disagree.

Salam relates to an LED package 32 which has reflectors 37-40 with curved surfaces such as surface 58 (see Abstract; Figs. 10 and 11 and col. 4, lines 1-6 of *Salam*). However, *Salam* is silent on using a filling compound on the reflectors 37-40, let alone a reflective filling compound having a curved surface which is different from the curved surfaces (such as the surface 58) of the reflectors 37-40, and forms a reflective area for part of the electromagnetic radiation. Therefore, *Salam* does not teach or suggest the limitation “a reflective filling compound provided between the semiconductor arrangement and the inner side of the basic housing, the reflective filling material comprising a curved surface forming a second reflective area for another portion of the electromagnetic radiation” (emphasis added) of amended claim 1.

Komoto relates to a light emitting device (see Abstract of *Komoto*). In the embodiment shown in Fig. 46 of *Komoto*, a semiconductor light emitting element 990 is covered by a dipping resin 542E, which is in turn covered by a molded resin 540E (see Fig. 46 and col. 30, lines 4-9 of *Komoto*). However, in *Komoto*, neither the dipping resin 542E nor the molded resin 540E is used to reflect electromagnetic radiation emitted by the light emitting element 990. Rather, the dipping resin 524E contains a fluorescent material which is used to convert a first wavelength into a second wavelength (see Abstract; col. 28, line 50 to col. 29, line 25 and col. 30, lines 7-9 of *Komoto*). The molded resin 540E is used to create a lens effect for the second wavelength (see col. 29, lines 33-41 of *Komoto*). Therefore, like *Salam*, *Komoto* also does not teach or suggest the limitation “a reflective filling compound provided between the semiconductor arrangement and the inner side of the basic housing, the reflective filling material comprising a curved surface forming a second reflective area for another portion of the electromagnetic radiation” (emphasis added) of amended claim 1.

As discussed above, the Examiner acknowledges that *Harrah* does not teach or suggest this limitation. As a result, the combination of *Harrah*, *Komoto* and *Salam* fails to teach or suggest this limitation.

It is noted that *Harrah* explicitly teaches using a lens 26 to control the direction of the light output (*see* Figs. 2-4 of *Harrah*). In view of this and the fact that neither *Komoto* nor *Salam* teaches or suggests using a reflective filling compound, a person with ordinary skill in the art would not be motivated to modify the device of *Harrah* by putting the LED 28 and the sub-mount 30 of *Harrah* into a cavity of a basic housing and then adding a reflective filling compound into the cavity to help control the direction of the light output. There is simply no suggestion or motivation in the applied prior art for "the reflective filling material comprising a curved surface forming a second reflective area for another portion of the electromagnetic radiation" , as now expressly recited in independent claim 1.

"To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome in which that which only the inventor taught is used against its teacher." *See* W.L. Gore & Assocs. V. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983). Only the present invention discloses the use of a filling material as a reflective area.

In view of the foregoing, withdrawal of the 35 U.S.C. 103(a) rejection of claims 11, 13 and 14 (now amended claim 1) is respectfully requested.

Dependent Claims 2-10, 12 and 15-24

Claims 2-10, 12 and 15-24 depend, either directly or indirectly, from independent claim 1 and, thus, each is allowable therewith.

In addition, these claims include features which serve to even more clearly distinguish the claimed invention over the prior art of record.

Conclusion


Based on all of the above, it is respectfully submitted that the present application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited.

Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

It is believed that no fees or charges are required at this time in connection with the application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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